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Technology Center 2600

Serial No. 09/494,534

IN THE CLAIMS:

The text of all pending claims are set forth below. Cancelled and withdrawn claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (PREVIOUSLY PRESENTED), (PREVIOUSLY PRESENTED), (cancelled), (withdrawn), (new), (PREVIOUSLY PRESENTED), (reinstated - formerly claim #), (previously reinstated), (re-presented - formerly dependent claim #) or, (previously re-presented).

Please AMEND the claims in accordance with the following:

1. (CURRENTLY AMENDED) A display characteristics recognition apparatus comprising:
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- a signal output unit connected to a display unit displaying an image according to a signal entered, said display unit displaying the image with a color displayed according to both the signal and a display characteristic of said display unit, said signal output unit outputting a color chart signal representative of a color value to said display unit;
 - an input unit receiving interactive user input, the input identifying or indicating a perceived color perception category perceived by the user to include ~~of~~ the color displayed on said display unit in accordance with the color chart signal outputted from said signal output unit, where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category; and
 - a display characteristics identification unit automatically determining a value approximating the display characteristic of said display unit in accordance with the color value of the color chart signal outputted from said signal output unit and in accordance with the interactive input entered through said input unit.
2. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said display characteristics identification unit determines, as the display characteristic, a relationship between a signal representative of a white image and a color of an image displayed on said display unit in accordance with the signal.

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3. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 2, wherein said display unit is selectively set up to any one of a plurality of display characteristics, and

said display characteristics identification unit determines display characteristics parameters to which said display unit is set up.

4. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said display unit is a display in which an image is displayed through emission of light, and

said display characteristics identification unit determines, as the display characteristic, luminance of said display.

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5. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein the color chart signal comprises color perception areas such that the color value is in one of two color perception areas adjacent to one another on a chromaticity diagram, and the color chart signal is displayed in chromaticity according to the display characteristic.

6. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said input unit enters a name of a color interactively selected from among color names associated with the color value of the color chart signal.

7. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said signal output unit outputs to the display unit a plurality of color chart signals each representative of a monochrome figure with a different color value to said display unit;

said input unit enters a name of a color of each of a plurality of monochrome figures; and
said display characteristics identification unit determines the display characteristic of said display unit in accordance with the color values of the plurality of color chart signals outputted from said signal output unit and the plurality of names of the color entered through said input unit.

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8. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 7, wherein said signal output unit outputs one of the plurality of color chart signals, and thereafter outputs, of the plurality of color chart signals, a color chart signal according to the name entered through said input unit to said display unit.

9. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said signal output unit outputs the color chart signal to said display unit, and in addition outputs to said display unit a signal causing black to be displayed around a monochrome figure displayed on said display unit according to the color chart signal.

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10. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said signal output unit outputs the color chart signal to said display unit, and in addition outputs to said display unit a signal causing gray to be displayed around a monochrome figure displayed on said display unit according to the color chart signal and further causing black to be displayed around the gray.

11. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said signal output unit outputs a series of color chart signals such that a series of colors corresponding to color perception areas adjacent to one another on a chromaticity diagram are displayed, and
the interactive input indicates or identifies a color corresponding to a boundary of two of the color perception areas.

12. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said display characteristics recognition apparatus further comprises a profile producing unit for generating data representative of display characteristics determined by said display characteristics identification unit in a predetermined format to produce a profile representative of characteristics as to display of an image by said display unit including the data.

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13. (PREVIOUSLY PRESENTED) A display characteristics recognition apparatus according to claim 1, wherein said display characteristics recognition apparatus further comprises:

a profile storage unit storing various sorts of profiles each representative of characteristics as to display of an image by a display unit including data indicative of various display characteristics in a common format; and

a profile selection unit selecting one profile from among the various sorts of profiles stored in said profile storage unit in accordance with the display characteristics determined by said display characteristics identification unit.

14. (CURRENTLY AMENDED) A storage medium storing a display characteristics recognition program for performing a process, the process comprising:

displaying an image with a color displayed according to both a display characteristic of a display unit and a color chart representative of a color value;

interactively inputting, by a user, information identifying or indicating a perceived color perception category perceived by the user to include of the color displayed on said display unit in accordance with the color chart, where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

automatically determining a value approximating the display characteristic of said display unit in accordance with the color value of the color chart and in accordance with the interactively inputted information identifying or indicating the perceived color perception category.

15. (CURRENTLY AMENDED) A computer system comprising:

a display displaying an image according to a signal entered, said display displaying the image with a color displayed according to both the signal and a display characteristic of said display;

a main frame unit outputting to said display a color chart signal indicating a color value of a monochrome figure and color name signals, which are representative of a plurality of color names corresponding to the color value, respectively; and

an input unit receiving user input, the user input indicating or identifying a color name perceived by the user and interactively selected from among said plurality of color names in

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accordance with an operation, where the information identifying or indicating the color name is a perceived color perception category of the color value displayed by the display unit according to the color chart signal and the display characteristic, and where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category,

wherein said main frame unit automatically determines a display characteristic of said display in accordance with the color chart signal outputted toward said display and the color name information received through said input unit.

16. (CURRENTLY AMENDED) A computer system comprising:

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a display unit displaying an image according to a signal entered, said display unit displaying the image with a color displayed according to both the signal and a display characteristic of said display unit;

a main frame unit outputting for display by said display unit a series of color chart signals with color values in adjacent color perception areas on a chromaticity diagram, where each area is a different color perception category, and where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

an input unit for interactively entering user input information indicating or identifying a perceived color corresponding to a boundary of the color perception categories of colors, which is interactively selected from among the colors displayed on said display unit, to said main frame unit in accordance with an operation,

wherein said main frame unit automatically determines a display characteristic of said display unit in accordance with the color values of the colors displayed on the display unit and the user input information interactively entered through said input unit.

17. (CURRENTLY AMENDED) A computer system comprising:

a display unit for displaying an image according to a signal entered, said display unit displaying the image with a color according to both the signal and display characteristics of said display unit;

a main frame unit for outputting to said display unit a series of color chart signals such that a series of colors in adjacent areas for two sorts of colors adjacent to one another on a

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chromaticity diagram are displayed; and

an input unit for ~~entering a user to input~~ a color corresponding to a boundary of the two sorts of colors, which is selected from among the series of colors displayed on said display unit, to said main frame unit in accordance with an operation,

wherein said main frame unit determines display characteristics of said display unit in accordance with the color chart signal outputted toward said display unit and the color entered through said input unit, wherein said main frame unit outputs to said display unit the series of color chart signals, and in addition a message signal representative of a message inquiring as to from which color of the series of colors displayed on said display unit an operator visually identifies it as a color of a specified color name, where a color name identifies a color perception category, and where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category.

18. (CURRENTLY AMENDED) A computer system comprising:

a display displaying an image according to a signal entered, said display displaying a color according to both the signal and a luminance display characteristic of said display;

a main frame unit causing said display to display a plurality of monochrome color patches with mutually different luminances of said display unit, each of the plurality of monochrome color patches being displayed with a same color value corresponding to a specified color name; and

an input unit for interactively selecting by a user one of the monochrome patches displayed with a color of the specified color name of a color perception category of the plurality of monochrome patches displayed on said display unit, to said main frame unit in accordance with an operation, where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category.

wherein said main frame unit determines a value of the luminance display characteristic of said display unit in accordance with the color chart signal outputted toward said display unit and the monochrome patch selected through said input unit.

19. (PREVIOUSLY PRESENTED) A computer system according to claim 18, wherein said main frame unit outputs color patches representative of a plurality of monochrome patches associated with mutually different luminance of said display unit, each of the plurality of monochrome patches being displayed with such a color that at least a predetermined ratio of

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persons have previously recognized it as the color of the specified color name under an associated luminance.

20. (CURRENTLY AMENDED) A display characteristics adjusting apparatus for adjusting display characteristics of a display unit for displaying an image according to a signal entered, said display unit displaying the image with a color according to both the signal and display characteristics of said display unit, said display characteristics adjusting apparatus comprising:

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a signal output unit outputting a signal for display to said display unit such signal comprising a color chart signal with a color value belonging to an area of a chromaticity diagram that is adjacent to another area on the chromaticity diagram, the areas representing different color perception categories with a color value belonging to an area of a chromaticity diagram that is adjacent to another area on the chromaticity diagram, the areas representing different color perception categories, where the signal is displayed on said display unit in accordance with display characteristics of said display unit, and where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category, and the apparatus allowing a user to indicate which of the color perception categories the displayed color of the color chart signal is perceived to belong in.

21. (CURRENTLY AMENDED) A display characteristics adjusting program storage medium storing a display characteristics adjusting program incorporated into a computer system, said display characteristics adjusting program causing said computer system to operate a display characteristics adjusting apparatus for adjusting display characteristics of a display unit for displaying an image according to a signal entered, said display unit displaying the image with a color according to both the signal and display characteristics of said display unit, said display characteristics adjusting program comprising:

a signal output unit outputting a signal for display to said display unit such signal comprising a color chart signal with a color value belonging to an area of a chromaticity diagram that is adjacent to another area on the chromaticity diagram, the areas representing different color perception categories where the signal is displayed on said display unit in accordance with display characteristics of said display unit, where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception

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category, and allowing a user to indicate which of the color perception categories the displayed color of the color chart signal is perceived to belong in.

22. (CURRENTLY AMENDED) A computer system comprising:
a display unit displaying an image according to a signal entered, said display unit displaying the image with a color according to both the signal and display characteristics of said display unit;

an adjusting unit adjusting display characteristics of said display unit in accordance with an operation; and

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a main frame unit for outputting a signal for display to said display unit such signal comprising a color chart signal with a color value belonging to an area of a chromaticity diagram that is adjacent to another area on the chromaticity diagram, the areas representing different color perception categories where the signal is displayed on said display unit in accordance with display characteristics of said display unit, where a color perception category comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category, the system allowing a user to indicate which of the color perception categories the displayed color of the color chart signal is perceived to belong in.

23. (CURRENTLY AMENDED) A display characteristics recognition apparatus comprising:

means for displaying an image on a display unit with a color determined by both an input signal and display characteristics of the display unit, and displaying a color chart signal;

means for inputting user input information identifying or indicating a name of a color displayed in accordance with the color chart signal as perceived by a user, where the name corresponds to a color perception category which comprises a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

means for automatically determining display characteristics of said display unit in accordance with the color chart signal and the indicated or identified name of the color.

24. (CURRENTLY AMENDED) A method, comprising:

displaying an image on a display unit with a displayed color determined by both an input signal and a display characteristic of the display unit, and displaying a color chart signal that

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specifies a color value corresponding to the displayed color;

interactively indicating a perceived color perception category of the displayed color, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

automatically determining a value approximating the display characteristic of said display unit based on the color value corresponding to the color chart signal and based on the indication of the perceived color perception category.

25. (CURRENTLY AMENDED) A computer readable storage storing information for enabling a computer to perform a process, the process comprising:

displaying an image on a display unit with a displayed color determined by both an input signal and a display characteristic of the display unit, and displaying a color chart signal that specifies a color value corresponding to the displayed color;

interactively indicating a perceived color perception category of the displayed color, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

automatically determining a value approximating the display characteristic of said display unit based on the color value corresponding to the color chart signal and based on the indication of the perceived color perception category.

26. (CURRENTLY AMENDED) An apparatus, comprising:

a display unit displaying an image on a display unit with a displayed color determined by both an input signal and a display characteristic of the display unit, and displaying a color chart signal that specifies a color value corresponding to the displayed color;

an input unit used to interactively indicate a perceived color perception category of the displayed color, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category; and

a determining unit automatically determining a value approximating the display characteristic of said display unit based on the color value corresponding to the color chart signal and based on the indication of the perceived color perception category.

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27. (CURRENTLY AMENDED) A method of color calibration, comprising:
displaying a color with a display system;
receiving interactive input identifying or indicating a perceived color perception category of the displayed color, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category; and
automatically determining a value of a characteristic of the display system based on the interactively indicated color perception category.

28. (CURRENTLY AMENDED) A method according to claim 27, wherein the color perception category is one of two different such categories, and the displayed color is susceptible to being perceived in either of the two different color perception categories according to the value of the characteristic, and where the characteristic is one of luminance and color temperature.

29. (CURRENTLY AMENDED) A method of color calibration, comprising:
causing a display system to emit a color, where the emitted color is a product of both an unknown value of a characteristic of the display and a color value passed to the display;
receiving input identifying or indicating a perceived color perception category of the emitted color, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category; and
automatically determining the unknown value of the characteristic of the display based on the perceived color of the emitted color.

30. (CURRENTLY AMENDED) A method according to claim 29, wherein the received input identifies the perceived color perception category as one of white, orange, brown, gray, yellow, purple, pink, red, green, blue, or black.

31. (CURRENTLY AMENDED) A method, comprising:
interactively identifying or indicating a perceived color perception category of a color emitted by a display system, the color perception category comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category;
automatically selecting a value of a characteristic of the display system based on the

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perceived general category, where the color value is such that, for different display systems, the emitted color of the color value tends to be perceived as being in a first general color category when emitted with a display system having a first value of the display characteristic, and the emitted color tends to be perceived as being in a second general color category when emitted with a display system having a second value of the display characteristic.

32. (PREVIOUSLY PRESENTED) A method according to claim 31, wherein the automatically selected value of the characteristic of the display system is one of the first and second values of the display characteristic, and wherein the display characteristic is one of luminance and color temperature.

33. (CURRENTLY AMENDED) A method comprising automatically generating a color profile of a display system by interactively identifying perceived color perception categories of predetermined color values displayed by the display system, and matching the perceived color categories to color categories expected to be perceived when displayed with different values of a display characteristic, the color perception categories each comprising a range of a substantial number of humanly perceptible gradations of color within such color perception category.